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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,461	09/25/2003	Ru-Shi Liu	2019-0221P	4564

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EXAMINER

HINES, ANNE M

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/669,461	Applicant(s) LIU ET AL.	
	Examiner Anne M. Hines	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on November 9, 2005, has been entered and acknowledged by the Examiner.

Claims 1 and 3-7 are pending in the instant application.

Claim Objections

Claims 1 is objected to because of the following informalities: The chemical formula "(Zn,Cd)S:M,N" is unclear because the formula can be interpreted in more than one way. For example, the formula could refer to ZnS:M,N, CdS: M,N, ZnCdS:M,N. The claim has been examined on its merits assuming that the formula refers to any of the possible interpretations. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Evans et al. (US Pat. No. 3,602,753).

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Regarding claims 1 and 7, Evans discloses a radiation source (Fig. 1, 23; Column 2, lines 69-71); and a semiconductor-type phosphor with ZnS:Ag,Cl (Column 1, lines 48-51), wherein the radiation source emits light ranging from about 495 nm (blue-green light) to 340 nm (ultra-violet) (Column 1, lines 48-51; Table 1, see wavelength for blue).

Regarding claim 4, Evans further discloses wherein the radiation source comprises an electron beam (Fig. 1, 25; Column 2, lines 69-71).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (US Pat. No. 3,602,753) in view of Poss (US Pat. No. 3,657,142).

Regarding claim 5, Evans teaches the invention of claim 1, but fails to teach how the phosphor is prepared. Poss teaches that it is common to affect the activation of co-activated zinc sulfide phosphors through organic metal thermal decomposition (Column 4, lines 31-35; Column 4, lines 42-50). Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Evans to prepare the phosphor by organic metal thermal decomposition, as disclosed by Poss.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al. (US Pat. No. 3,602,753) in view of Shimizu (US Pat. No. 6,614,179).

Regarding claims 3 and 6, Evans teaches the invention of claim 1, but fails to teach wherein the radiation source is a light emitting diode and the phosphor is adjusted in weight ratio with respect to a material mixed with the phosphor. Shimizu teaches a white light source wherein an Light Emitting Diode (LED) is composed of an LED chip (Fig. 1, 102; Column 8, lines 50-53) that excites a phosphor contained in a coating resin (Fig. 1, 101; Column 8, lines 52-53) to generate light. Therefore, it would have been obvious to one of ordinary skill in the art to modify the invention of Evans by mixing the phosphor with a resin and exciting the phosphor with an LED to generate light, as disclosed by Shimizu.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kingsley et al.	US Pat. No. 3,664,862
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Response to Arguments

Applicant's arguments with respect to claims 1 and 3-6 have been considered but are moot in view of the new ground(s) of rejection.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anne M Hines
Patent Examiner
Art Unit 2879

Amf
11/29/05

Msigo 12/2/05
MARICELI SANTIAGO
PRIMARY EXAMINER